

component, a parent\_id column that identifies a parent component of each component, and a type\_name column that specifies a component type of each component; and

a plurality of component-specific tables, wherein each component-specific table encompasses only those components of the hierarchy whose component type is a specific component type, wherein the at least one column of each component-specific table comprises a component\_id column and a component information column, wherein the component\_id column of each component-specific table identifies each component in each component-specific table, is a primary key for each component-specific table, and is a foreign key pointing to a corresponding component in the component table, and wherein the component information column of each component-specific table comprises a description or content of each component in each component-specific table.

29. (New) The database of claim 28,

wherein the plurality of tables comprises an association table for describing associations between components of the hierarchy;

wherein the at least one column of the association table comprises an association\_id column, a component\_id column, and an assoc\_component\_id column;

wherein the association\_id column of the association table identifies each association and is a primary key for the association table; and

wherein the component\_id column and the assoc\_component\_id column of the association table collectively identify components associated with each other in each association and are each a foreign key pointing to a corresponding component in the component table.

30. (New) The database of claim 28, wherein the at least one column of the component table comprises a workflow\_\_state column that specifies a workflow state of each component.

31. (New) The database of claim 28,

wherein the plurality of tables comprises an assignment table for identifying assignments associated with components of the hierarchy;

wherein the at least one column of the assignment table comprises an assignment\_id column, a component\_id column, and a principal\_id column;

wherein the assignment\_id column of the assignment table identifies each assignment and is a primary key for the assignment table;

wherein the component\_id column of the assignment table identifies a component associated with each assignment and is a foreign key pointing to a corresponding component in the component table; and

wherein the principal\_id column of the assignment table identifies a principal party responsible for each assignment.

32. (New) The database of claim 31,

wherein the plurality of tables comprises a principal table for identifying at least one principal party;

wherein the at least one column of the principal table comprises a principal\_id column and a principal\_type column;

wherein the principal\_id column of the principal table identifies each principal party and is a primary key for the principal table;

wherein the principal\_type column of the principal table identifies a principle type of each principal party, said principal type denoting a user or a group of users; and

wherein the principal\_id column of the assignment table is a foreign key pointing to a corresponding principal party in the principal table.

33. (New) The database of claim 32,

wherein the plurality of tables comprises a state changes table for identifying workflow state changes of components of the hierarchy;

wherein the at least one column of the state changes table comprises a change\_id column, a component\_id column, a from\_state column, a to\_state column, and a principal\_id column;

wherein the change\_id column of the principal table identifies each workflow state change and is a primary key for the state changes table;

wherein the component\_id column of the state changes table identifies a component whose workflow state change is identified in the change\_id column and is a foreign key pointing to a corresponding component in the component table;

wherein the from\_state column and the to\_state column of the state changes table respectively identifies an initial workflow state and a final workflow state of each workflow state change;

wherein the principal\_id column of the of the state changes table identifies a principal party responsible for each workflow state change and is a foreign key pointing to a corresponding principal party in the principal table.

34. (New) The database of claim 28,

wherein the plurality of tables comprises a component type table for identifying component types of the plurality of component types;

wherein the at least one column of the component type table comprises a type\_name column that specifies each component type; and

wherein the type\_name column of the component type table is a primary key for the component type table and is a foreign key pointing to a corresponding component type in the component table.

35. (New) The database of claim 34,

wherein the plurality of tables comprises a state transitions table for identifying workflow state transitions keyed to component types of the plurality of component types;

wherein the at least one column of the state transitions table comprises a transition\_id column, type\_name column, a from\_state column, and a to\_state column;

wherein the transition\_id column of the state transitions table identifies each workflow state transition and is a primary key for the state transitions table;

wherein the type\_name column of the state transitions table specifies a component type and is a foreign key pointing to a corresponding component type in the component type table; and

wherein the from\_state column and the to\_state column of the state transitions table respectively identifies an initial workflow state and a final workflow state of each workflow state transition.

36. (New) The database of claim 28,

wherein the plurality of tables comprises a field table for describing custom fields that capture information relevant to the components of the hierarchy;

wherein the at least one column of the field table comprises a field\_id column, a component\_id column, a field\_type column, and a description column;

wherein the field\_id column of the field table identifies each custom field and is a primary key of the field table;

wherein the component\_id column of the field table identifies a component that comprises the custom field identified in the field\_id column and is a foreign key pointing to a corresponding component in the component table;

wherein the field\_type column of the field table specifies a registered field type of each custom field and points to a set of tables that define a data type, editor, and constraints of each custom field; and wherein the description column of the field table describes the captured information.

37. (New) The database of claim 36, wherein the at least one column of the field table that comprises an expression field that comprises an expression and a value field that comprises a value of the expression, wherein the value in the value field is configured to be updated in response to a change in at least one dependency that the expression depends on.

38. (New) The database of claim 28, wherein each component in the component table is subject to a containment policy that limits permissible description or content of each component in each component-specific table.

39. (New) The database of claim 28,

wherein the plurality of components comprise particular components;

wherein the particular components include at least one task component, at least one issue component, and at least one document component;

wherein the specific component type of each issue component, task component, and document component is a task type, an issue type, and a document type, respectively, and

wherein the plurality of component-specific tables comprise an issue table encompassing only the at least one issue component, a task table encompassing only the at least one task component, and a document table encompassing only the at least one document component.

40. (New) The database of claim 39, wherein the component\_id column of the component table identifies a first task component of the at least one task component, a first issue component of the at least one issue component, and a first document component of the at least one document component, and wherein the parent\_id column of the component table identifies:

the first task component as a parent component of the first issue component; and

the first issue component as a parent component of the first document component.

41. (New) A calculation engine comprising a popup calculator configured to be displayed to a user via a display interface of a computer system,

wherein the popup calculator is configured to perform, under interactive control by the user via the display interface, an evaluation of a specified function of set of functions and to display a result of the evaluation to the user via the display interface;

wherein the returned result of the evaluation includes information derived from a plurality of tables comprised by a database;

wherein each table comprises at least one column and at least one row;

wherein the plurality of tables describes a plurality of components of a hierarchy in which hierarchical relationships between components of the hierarchy are defined;

wherein the database stored in the computer system, and

wherein the plurality of tables comprises a component table and a plurality of component-specific tables;

wherein the component table encompasses all components of the hierarchy, wherein the components of the hierarchy encompass a plurality of component types, and wherein the at least one column of the component table comprise a component\_id column that identifies each component, a parent\_id column that identifies a parent component of each component, and a type\_name column that specifies a component type of each component;

wherein each component-specific table encompasses only those components of the hierarchy whose component type is a specific component type, wherein the at least one column of each component-specific table comprises a component\_id column and a component information column, wherein the component\_id column of each component-specific table identifies each component in each component-specific table, is a primary key for each

component-specific table, and is a foreign key pointing to a corresponding component in the component table, and wherein the component information column of each component-specific table comprises a description or content of each component in each component-specific table.

42. (New) The calculation engine of claim 41, wherein the result of the evaluation is constrained by a specified filter argument that filters a set of results of the evaluation.

43. (New) The calculation engine of claim 41, wherein the set of functions comprises a lookup function, and wherein the result of the evaluation of the lookup function is an identification of a single component of the plurality of components for a specified component type comprised by the single component.

44. (New) The calculation engine of claim 41, wherein the set of functions comprises a lookup function, and wherein the result of the evaluation of the lookup function is an identification of at least two components of the plurality of components for a specified component type comprised by the at least two components.

45. (New) The calculation engine of claim 41, wherein the set of formulas comprises a task assignment function, and wherein the result of the evaluation of the lookup function is an identification of preliminary analysis tasks assigned to the user by priority.

46. (New) The calculation engine of claim 41, wherein the set of formulas comprises a component identification function, wherein the result of the evaluation of the component



identification function is an identification of at least one component of the plurality of components, and wherein the at least one component is beneath a specified parent component of the plurality of components.

47. (New) The calculation engine of claim 41, wherein the identification of a first component of the at least one component includes an identification of a position of the first component in a path through the hierarchy.

48. (New) A method of display of data to a user, said method comprising:

- displaying a popup calculator to the user via a display interface of a computer system;
- performing an evaluation of a specified function of set of functions, said performing the evaluation being under interactive control of the popup calculator by the user via the display interface;
- displaying a result of the evaluation to the user via the display interface;
- wherein the result of the evaluation includes information derived from a plurality of tables comprised by a database;
- wherein each table comprises at least one column and at least one row;
- wherein the plurality of tables describes a plurality of components of a hierarchy in which hierarchical relationships between components of the hierarchy are defined;
- wherein the database stored in the computer system, and
- wherein the plurality of tables comprises a component table and a plurality of component-specific tables;
- wherein the component table encompasses all components of the hierarchy, wherein the components of the hierarchy encompass a plurality of component types, and wherein the at least one column of the component table comprise a component\_id column that identifies each component, a parent\_id column that identifies a parent component of each component, and a type\_name column that specifies a component type of each component;
- wherein each component-specific table encompasses only those components of the hierarchy whose component type is a specific component type, wherein the at least one column of each component-specific table comprises a component\_id column and a component information column, wherein the component\_id column of each component-specific table

identifies each component in each component-specific table, is a primary key for each component-specific table, and is a foreign key pointing to a corresponding component in the component table, and wherein the component information column of each component-specific table comprises a description or content of each component in each component-specific table.

49. (New) The method of claim 48, wherein the result of the evaluation is constrained by a specified filter argument that filters a set of results of the evaluation.

50. (New) The method of claim 48, wherein the set of functions comprises a lookup function, and wherein the result of the evaluation of the lookup function is an identification of a single component of the plurality of components for a specified component type comprised by the single component.

51. (New) The method of claim 48, wherein the set of functions comprises a lookup function, and wherein the result of the evaluation of the lookup function is an identification of at least two components of the plurality of components for a specified component type comprised by the at least two components.

52. (New) The method of claim 48, wherein the set of formulas comprises a task assignment function, and wherein the result of the evaluation of the lookup function is an identification of preliminary analysis tasks assigned to the user by priority.

53. (New) The method of claim 48, wherein the set of formulas comprises a component identification function, wherein the result of the evaluation of the component identification function is an identification of at least one component of the plurality of components, and wherein the at least one component is beneath a specified parent component of the plurality of components.

54. (New) The method of claim 48, wherein the identification of a first component of the at least one component includes an identification of a position of the first component in a path through the hierarchy.